

Patient and Physician Attitudes and Behaviors Associated With DTC Promotion of Prescription Drugs — Summary of FDA Survey Research Results

**Final Report
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APPENDIX C: SUPPLEMENTAL ANALYSES

**U.S. Department of Health and Human Services
Food and Drug Administration
Center for Drug Evaluation and Research**

Supplemental Analyses

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Appendix C.1: Ad - Evoked Information Seeking Behaviors

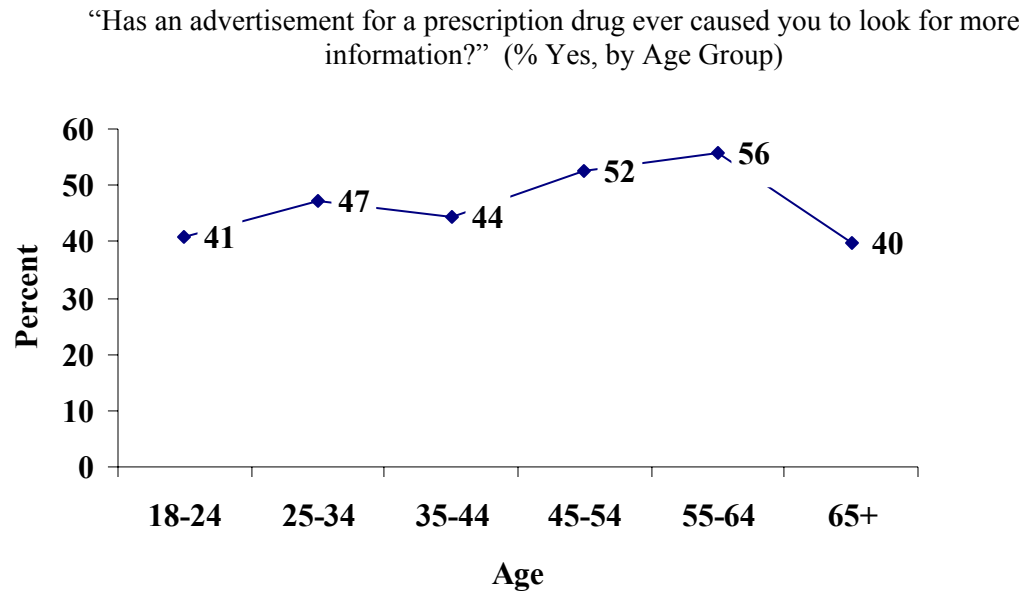
A series of regression analyses were conducted to determine whether the observed difference from 1999 to 2002 was *moderated by*¹ demographic or condition characteristics of the samples or if the demographic variables were simply *related to* response. Specifically, these analyses examined whether the change between 1999 and 2002 differed in magnitude across demographic subgroups or condition variables.

None of the variables examined (age, current use of prescription drugs, education, ethnicity, gender, health knowledge, health status, income, or marital status) significantly moderated the change. Nevertheless, several of these variables were *related to* the extent of ad-evoked search. They are briefly reviewed below.

Age: Respondents in the 45 to 64 age category were the most likely to report ad-evoked search for information about a drug or health condition (χ^2 [5 df] = 12.9, $p < .05$; see Figure C1a)

¹ “In general terms, a moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable.” (Baron & Kenny, 1986, p. 1174)

Figure C1a
Ad-Evoked Search for Information by Age

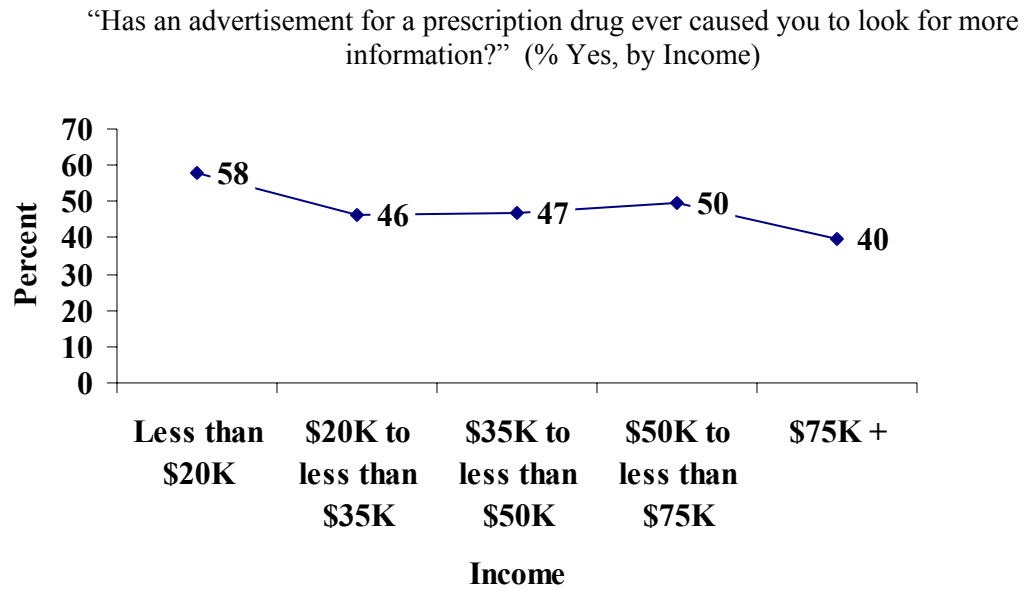


Current use of prescription drugs: Those respondents who were currently taking one or more prescription drugs were more likely to reported that an advertisement had caused them to search for information, compared to respondents who were not currently taking any prescription drugs (51% vs. 35%; χ^2 [1 df] = 19.5, $p < .001$).

Ethnicity: A higher percentage of non-whites (59%) than whites (45%) reported that an advertisement had caused them to search for additional information (χ^2 [1 df] = 11.5, $p < .01$).

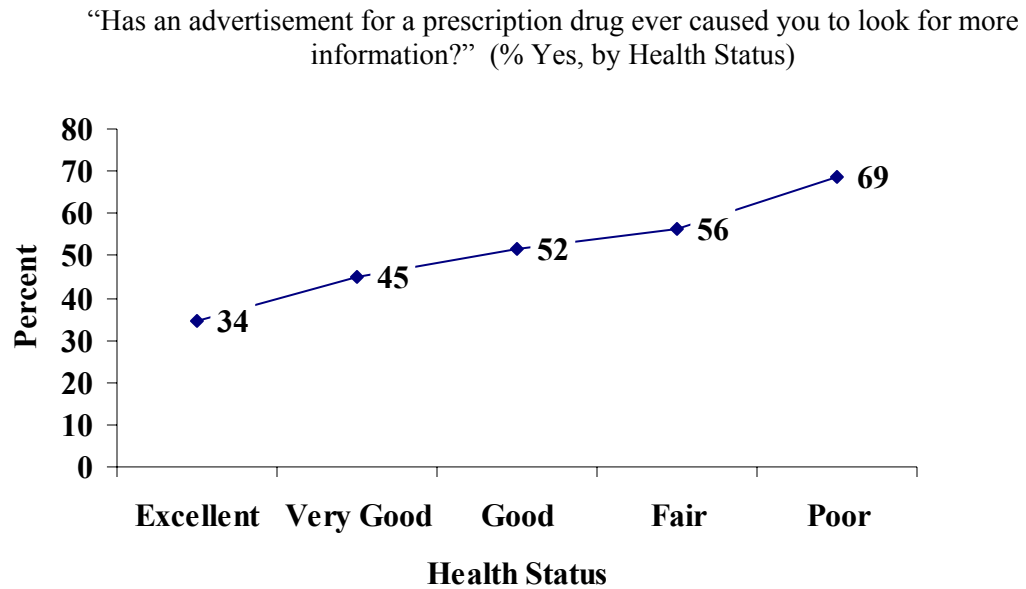
Income: As income increased, the likelihood of searching for more information as a result of a DTC ad decreased. The likelihood of searching for information in response to an advertisement was highest among respondents with household incomes under \$20,000 and lowest among respondents with incomes greater than \$75,000 (χ^2 [5 df] = 12.2, $p < .05$; see Figure C1b).

Figure C1b
Ad-Evoked Search for Information by Income



Health status: The likelihood of searching for information in response to an advertisement varied directly with health status (χ^2 [4 df] = 29.0, $p < .001$). Respondents in poorer health are more likely to report engaging in ad-evoked information search, compared to respondents in better health (see Figure C1c).

Figure C1c
Ad-Evoked Search for Information by Health Status



No differences were observed due to education, health knowledge or gender. Females were slightly more likely than males to report ad-evoked search for information about a drug or health condition (49.5% [F], 43.2% [M]), but this difference was not statistically significant (χ^2 [1 df] = 3.54, $p > .05$).

Appendix C.2: Consulting the Doctor about a New Medical Condition

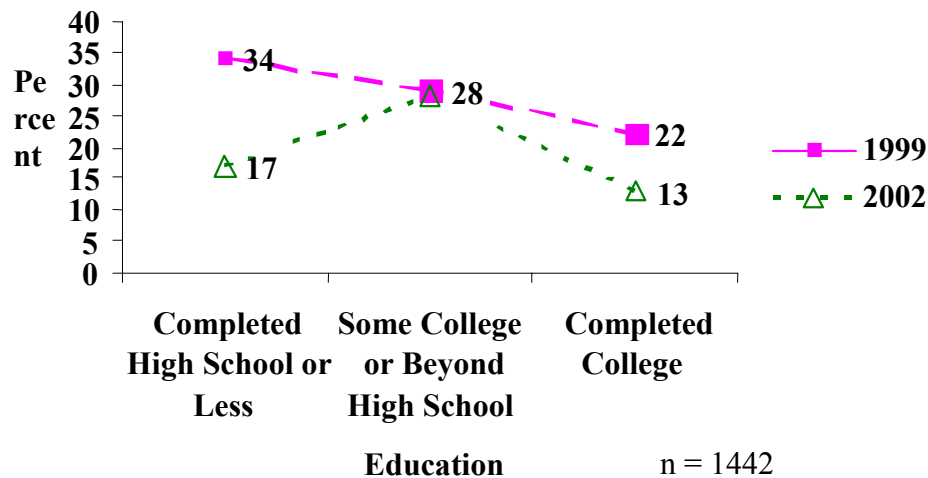
As described earlier, the number of individuals consulting their doctor about a new medical condition as a result of a DTC ad declined from 1999 to 2002. The magnitude of this decline was moderated by education (Wald [2 df] = 8.90, $p < .05$) and age (Wald [1 df] = 5.91, $p < .05$)². No moderating effects were observed for current prescription drug use, ethnicity, gender, health status, health knowledge, income, or marital status.

Significant declines in ad-evoked discussions with their doctor about a new medical condition were observed from 1999 to 2002 in the least and most educated groups. Figure C2a shows that among those who completed high school or less, the percentage of those reporting a DTC ad caused them to talk to their doctor about a new medical condition dropped nearly in half, from 34% (1999) to 17% (2002). Similarly, among those who completed college, the percentage dropped from 22% in 1999 to 13% in 2002. For the intermediate education group, those with some college or training beyond high school, the rate remained unchanged (29% in 1999 and 28% in 2002).

Figure C2a

Discussion with Doctor about a New Medical Condition by Year and Education

“Has an advertisement for a prescription drug ever caused you to ask a doctor about a medical condition or illness of your own that you had not talked to a doctor about before?” (% Yes, by Year and Education Level)



Asking about a new medical condition showed a greater decline among older respondents. An inspection of the data using two age categories, 18-44 versus 45+, shows that in 1999, older respondents were more likely than younger respondents to indicate that a DTC advertisement had caused them to ask their doctor about a new condition (35% in the 45+ group versus 20% in the 18-44 group). However, in 2002 this age difference was not observed (19% for the 45+ group versus 17% in the 18-44 group) ($B_{(\text{age} * \text{year})} = 0.64$, Wald [1 df] = 5.91, $p < .05$).

² A binary logistic analysis was used to test effects due to year, the demographic variable, and an interaction of year*variable.

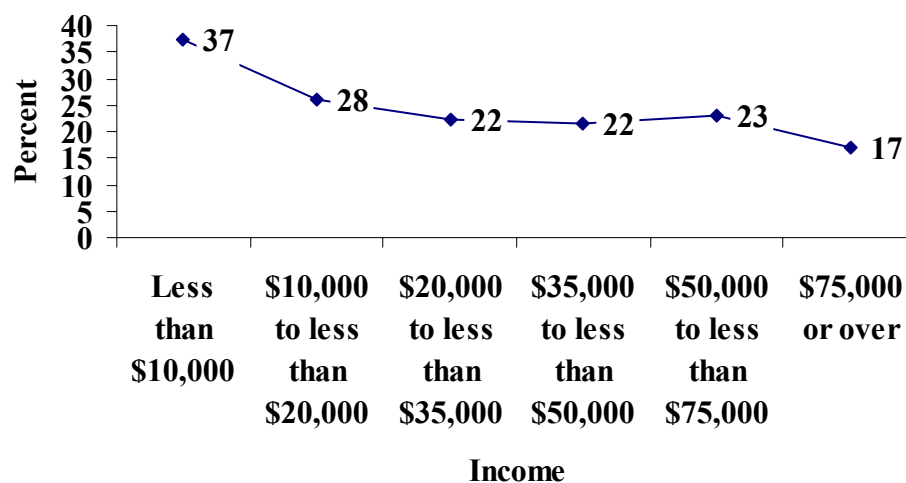
While only education and age moderated the observed decline from 1999 to 2002, the overall likelihood of a consultation with a doctor about a new medical condition in response to a DTC advertisement was related to several demographic and condition characteristics – income, age, ethnicity, health status, and current use of a prescription drug. The likelihood of discussing a new condition in response to a DTC advertisement was not related to respondents’ health knowledge, marital status or gender. In addition to the moderating effect described above, education and age had an overall effect. The most highly educated were least likely to respond to a DTC advertisement (Wald [2 df] = 19.16, $p < .001$). Also, older respondents were more likely to discuss a new condition, with the 65+ and the 45-54 groups being the most likely to discuss a new condition (Wald [5 df] = 13.47, $p < .05$).

Income: Higher income respondents were less likely than those with a lower income to discuss a new medical condition (χ^2 [5 df] = 18.4, $p < .01$; see Figure C2b).

Figure C2b

Discussion with Doctor about a New Medical Condition by Income

“Has an advertisement for a prescription drug ever caused you to ask a doctor about a medical condition or illness of your own that you had not talked to a doctor about before?” (% Yes, by Income Category)



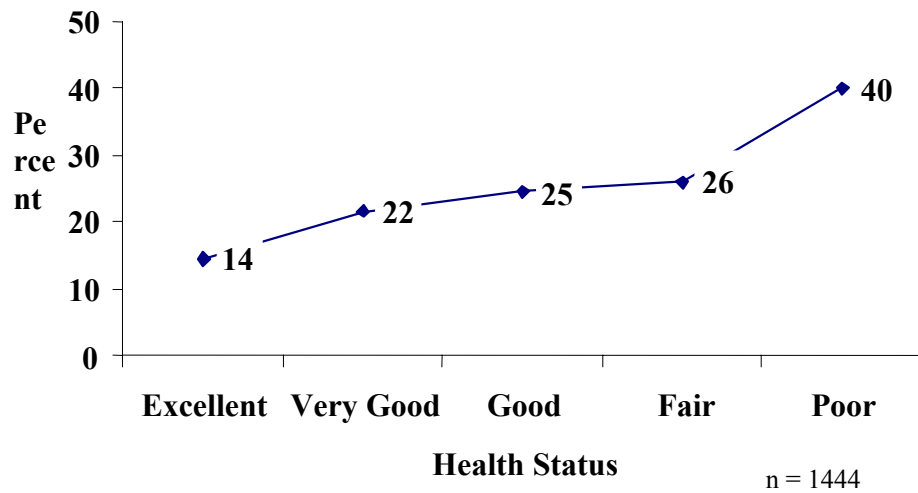
Ethnicity: Non-whites were more likely than whites to discuss a new medical condition (27.5% versus 21.3%; χ^2 [1 df] = 4.8, $p < .05$).

Health Status: Respondents in poor health were more likely to talk about a new medical condition than those in better health (χ^2 [4 df] = 25.1, $p < .001$; Figure C2c).

Figure C2c

Discussion with Doctor about New Medical Condition by Health Status

“Has an advertisement for a prescription drug ever caused you to ask a doctor about a medical condition or illness of your own that you had not talked to a doctor about before?” (% Yes, by Health Status)



Prescription Drug Use: Those currently taking a prescription drug were more likely than those not currently taking a prescription drug to talk about a new medical condition, 25% versus 16% (χ^2 [1 df] = 13.6, $p < .001$).

Appendix C.3: Patient Opinions of DTC Advertising Factors by Demographic Subgroups

Although eleven opinion items were asked in the consumer surveys, these items do not represent eleven separate facets of consumers' opinions toward DTC advertising. A factor analysis of the eleven opinion items used in the 1999 and 2002 surveys reveals four "factors" or distinct themes underlying consumer responses to the set of eleven opinion questions. These four factors define the "redundancy" within the items.³ The items forming the first and primary factor (Factor 1) were those addressing the positive aspects of DTC advertising (e.g., "I like seeing advertisements for prescription drugs" "Advertisements for prescription drugs help me make better decisions about my health" "... better discussions with doctor ..."). The second factor was composed of two items about the insufficiency of the information conveyed in DTC advertisements (e.g., "Advertisements for prescription drugs do not give enough information about possible risks and negative effects of using the drug," "... possible benefits and positive effects of using the drug ..."). The remaining two factors represent a small portion of the variance within the set and therefore will not be discussed.

A series of regression analyses was conducted to determine whether any demographic or condition variables moderated the change exhibited in the opinion items that compose Factors 1 and 2. Specifically, this is a test of whether the change differed in magnitude across subgroups defined by a demographic or condition variable. The analyses indicate that none of the variables examined (ethnicity, age, education, income, gender, marital status, health status, use of prescriptions, or health knowledge) significantly moderated the change observed between 1999 and 2002 in any of the factors.

As described above, there was a significant decline in consumers' opinions regarding potentially positive aspects of DTC advertising. The items that exhibited this change were the items that compose Factor 1. While these demographic variables did not moderate the change observed between 1999 and 2002, several of the demographic and condition variables are related to patient opinions toward DTC advertising. To illustrate these relationships and to facilitate the presentation, we have selected the defining opinion item of Factor 1 ("I like seeing advertisements for prescription drugs") for discussion. In the interest of space, the discussion will be limited to the analysis of Factor 1.

Differences in attitude toward seeing prescription drug advertising were associated with age, ethnicity, education, gender, current use of prescription drugs, and health status.

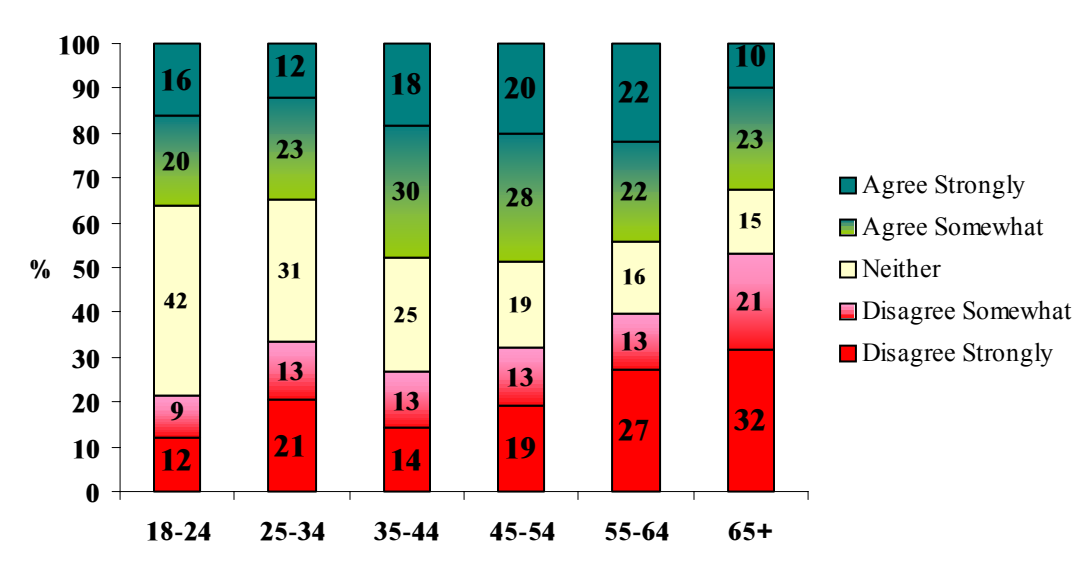
Age: A trend toward a less positive attitude was associated with increasing age, mainly among those 45 and older (χ^2 [20 df] = 105.6, $p < .001$). A polarization of responses from the neutral response option to the disagreement categories was primarily responsible for this change (see Figure C3a). For example, 53% of those in the "65 plus" age group disagreed somewhat (21%) or disagreed strongly (32%) with the statement "I like seeing prescription drug ads," whereas

³ The factor eigenvalues for factors I through IV were 2.99, 1.65, 1.08, and 1.02 respectively. Items and loadings for each factor were: I. "better discussion" (.78), "like seeing" (.75), "better decisions" (.75), "make aware" (.70), "decide to discuss" (.64); II. "not enough benefit information" (.83), "not enough risk information" (.71); III. "doctor not needed" (.78), "seem better than really are" (.72); and IV. "would not talk to doctor" (.75), "only the safest" (.60).

only 27% of the 35-44 age group disagreed somewhat (13%) or disagreed strongly (14%) with the statement.

Figure C3a

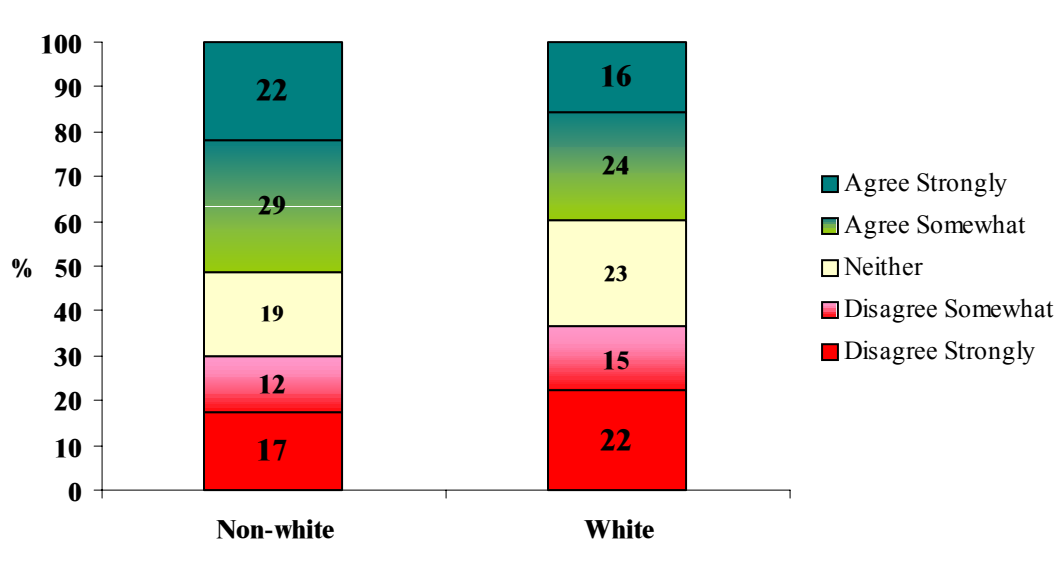
“I like seeing advertisements for prescription drugs, by age”



Ethnicity: A significant difference between white and non-white respondents was observed with non-whites having a more positive attitude toward DTC advertisements (χ^2 [4 df] = 12.1, $p < .05$; see Figure C3b). About 51% of non-whites agreed (22% strongly and 29% somewhat) that they like seeing prescription drug advertisements whereas about 40% of whites agreed (16% strongly and 24% somewhat).

Figure C3b

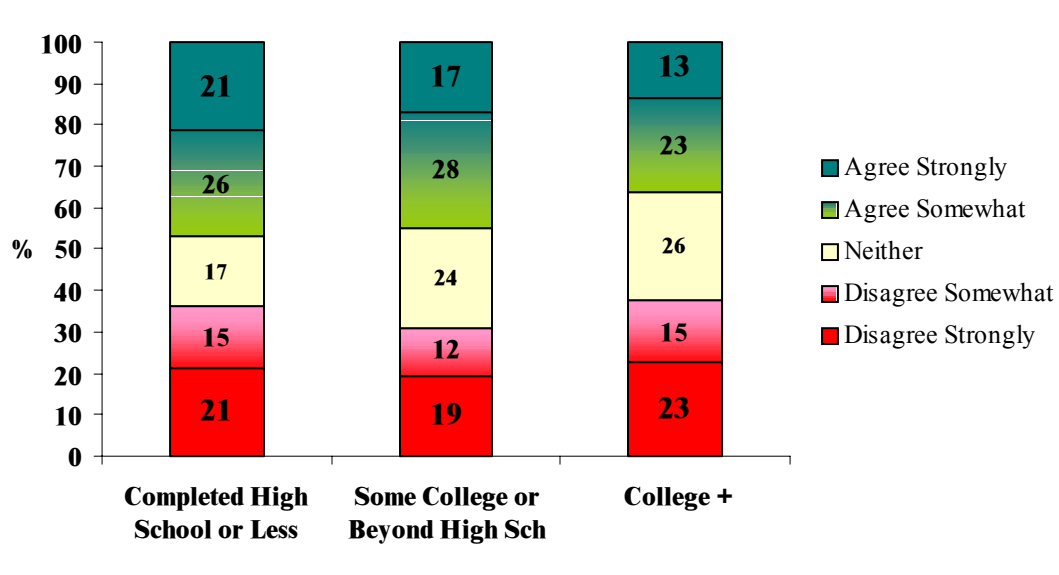
“I like seeing advertisements for prescription drugs, by Ethnicity”



Education: Those with more education were less positive about seeing DTC advertisements (χ^2 [8 df] = 27.3, $p < .01$; see Figure C3c). For example, 47% of those with a high school education or less agreed somewhat (26%) or agreed strongly (21%) with the statement “I like seeing prescription drug ads,” whereas 36% of those completing college agreed somewhat (23%) or agreed strongly (13%) with the statement.

Figure C3c

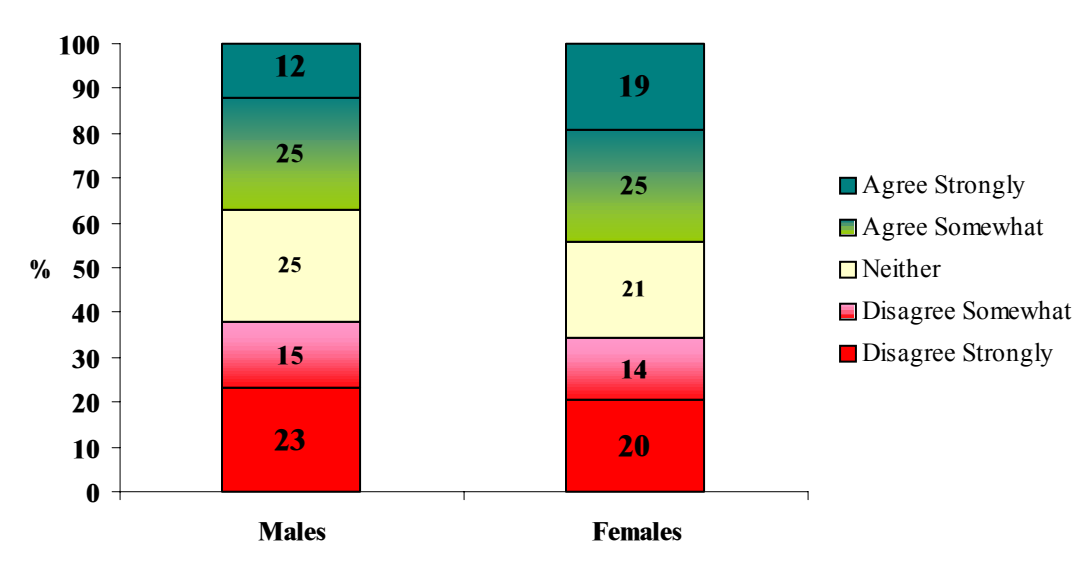
“I like seeing advertisements for prescription drugs, by Education”



Gender: Females were more positive than males about seeing prescription drug advertising (χ^2 [4 df] = 13.2, $p < .05$; see Figure C3d). About 44% of females indicated a positive view (25% agreed somewhat and 19% agreed strongly) toward seeing DTC advertisements versus 37% for males (25% agreed somewhat and 12% agreed strongly).

Figure C3d

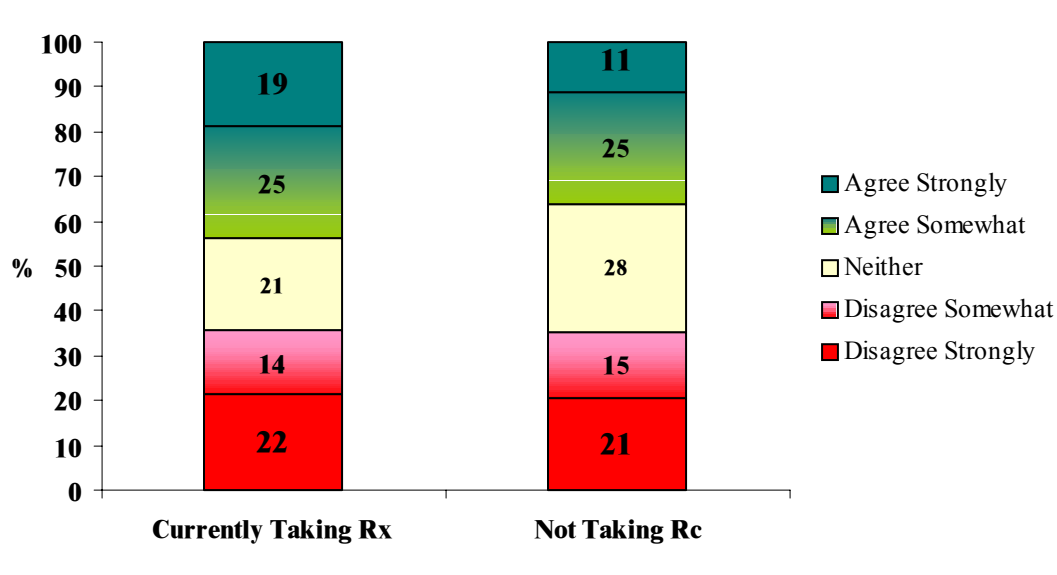
“I like seeing advertisements for prescription drugs, by Gender”



Current use of prescriptions: Those currently taking a prescription drug were more positive (χ^2 [4 df] = 16.82, $p < .01$; see Figure C3e). About 44% of those currently taking a prescription drug indicated a positive position toward seeing DTC advertisements versus 36% for those not currently taking a prescription drug (25% agreed somewhat and 11% agreed strongly).

Figure C3e

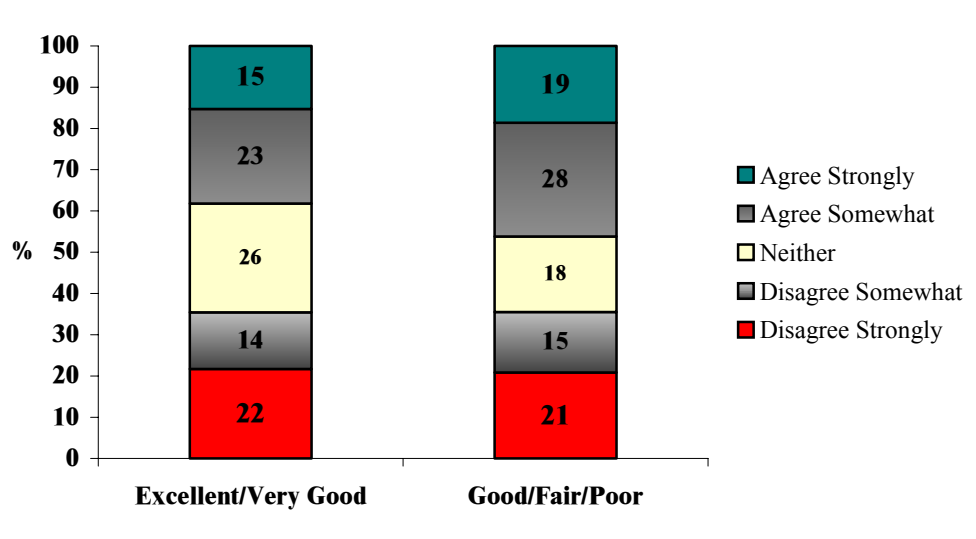
“I like seeing advertisements for prescription drugs, by Current Rx Use”



Health status: Those respondents who described their health as *excellent* or *very good* were less positive about viewing prescription drug advertising than those who described themselves as less healthy (*good, fair* or *poor*) (χ^2 [4 df] = 16.1, $p < .001$; see Figure C3f). About 38% of the former group indicated they liked seeing prescription drug advertisements (23% agreed somewhat and 15% agreed strongly) whereas about 47% of those of lesser health did so (28% agreed somewhat and 19% agreed strongly).

Figure C3f

“I like seeing advertisements for prescription drugs, by Health Status”



The analyses of the demographic analyses for the “like seeing” question illustrates how much variance there is among patients regarding the potential positive effects of DTC advertising.

Appendix C.4: Physician Perception of the Influence of DTC Advertising on a Specific Patient Interaction

Representativeness of Recalled Patient

Ninety-three percent (93%) of primary care physicians and 91% of specialists were able to recall a patient who discussed DTC advertising. The characteristics of this patient varied slightly by subgroup (see Table C4a). Primary care physicians were more likely than specialists to have seen this patient within the last two days (χ^2 [4 df] = 11.16, $p < .05$), and to report that this patient had been in their practice longer (χ^2 [5 df] = 58.35, $p < .001$). Specialists were slightly more likely to say that this patient encounter was *very representative* of other such encounters, compared with primary care physicians (χ^2 [4 df] = 9.47, $p = .05$). However, the two groups did not differ in the extent to which they believed this encounter was either very or somewhat representative of other patient encounters in which a patient initiated a discussion about a prescription drug, nor did they differ in the rating of their interaction with the patient (97% of the physicians rated the interaction as *Excellent* or *Good*). This result provides some confidence that physicians are not focusing on an unusual patient encounter when describing this particular interaction.

Table C4a
Characteristics of Patient Who Initiated a Discussion about an Advertised Prescription Drug

Patient Gender	Primary Care Physicians percent (n)	Specialists percent (n)
Male	38% (88)	43% (97)
Female	60% (140)	56% (128)
DK/REF	2% (4)	1% (2)
How long has patient been in practice?		
Less than 6 months	8% (19)	23% (51)
Six months – 1 year	5% (12)	12% (26)
1 year to less than 2 years	13% (29)	17% (39)
2 years to less than 5 years	28% (66)	33% (75)
5 or more years	44% (102)	14% (32)
DK/REF	2% (4)	2% (4)
How long ago was patient seen?		
Today or yesterday	32% (74)	21% (47)
Before yesterday but within last week	38% (88)	41% (94)
More than 1 week ago but within last month	24% (55)	28% (64)
More than 1 month ago	6% (13)	10% (22)
DK/REF	1% (2)	0
Compared to other patients who have initiated a discussion about a DTC advertised drug, how representative was this patient encounter?		
Very representative	36% (84)	50% (113)
Somewhat representative	51% (119)	41% (92)
Somewhat unrepresentative	10% (22)	8% (18)
Very unrepresentative	3% (6)	2% (4)
Have not had any other patients initiate this type of discussion	< 1% (1)	0

Table C4a, con't.		
Overall, how would you rate your interaction with this patient at this visit?		
Excellent	58% (135)	57% (130)
Good	39% (90)	40% (90)
Only fair	3% (6)	3% (7)
Poor	0	0
DK/REF	< 1 (1)	
Base N (<i>among physicians who could remember a patient who had initiated a discussion about a prescription drug he/she had seen advertised</i>)	232	227

Appendix C.5: Physicians Opinions of Potential Negative Effects of DTC Advertising

Several variables may explain why primary care physicians perceived more potential problems with DTC advertising than did specialists. In the current study, demographic/descriptive variables included the age and gender of the physician, number of years in practice, number of patients seen in an average week, number of prescriptions written in an average week, and the type of practice to which the physician belongs. A hierarchical regression analysis was conducted to determine whether the attitudinal differences between primary care physicians and specialists remained after controlling for these potentially confounding demographic variables.⁴ Physicians who see more patients per week tended to perceive more problems with DTC advertising, indicating that weekly patient volume tends to predict these attitudes. Nevertheless, there is still a significant difference in attitudes between primary care physicians and specialists, even after controlling for the number of patients seen. More crowded patient dockets on the part of primary care physicians does not explain this difference.

⁴ This multiple-step procedure determines which variables predict the outcome measure after controlling for those variables on previous steps. In this case, all six demographic variables were entered on the first step and the physician subgroup distinction (primary care physician/specialist) was entered on the second step. The regression revealed that demographic variables accounted for a significant amount of variance in potential problems ($R^2 = .05$, $p < .001$). The number of patients seen in an average week ($B = .003$, $SE_B = .001$, $\beta = .20$) carried this variance primarily, consistent with the findings of the t-tests. Physicians who see more patients per week tended to perceive more problems with DTC advertising, indicating that weekly patient volume tends to predicts these attitudes. Note, however, that the demographic variables only account for 5% of the variance, which is a small amount.

The regression analysis also demonstrated that above and beyond the six other factors, the primary care physician/specialist distinction accounted for additional significant variance ($\Delta R^2 = .02$, $p < .01$). Again, primary care physicians perceived more potential problems of DTC advertising on their patients and practice than did specialists ($B = -.17$, $SE_B = .06$, $\beta = -.13$). Note that, as in the first step, this effect—although statistically significant—is small, at only 2% of the variance explained.

Appendix C.6: Physician Opinions of Potential Positive Effects of DTC Advertising

Regression analyses were conducted for attitude measures to assess the potential impact of demographic variables. As expected, the attitudes of primary care physicians and specialists did not differ after controlling for other variables in the regression analysis, just as they were before considering these variables. In fact, none of the variables included in these regression analyses predicted any variance in the outcome measures. Therefore, physicians' attitudes toward patient's understanding of prescription drugs and potential benefits of DTC advertising were independent of age, gender, specialty, type of practice, years in practice, number of patients seen per week, and the number of prescriptions written per week. In summary, primary care physicians and specialists differed only in their attitudes toward potential problems of DTC advertising, with primary care physicians expressing more negative attitudes. This difference remained even after controlling for patient volume.